155-8 THE PROGRAM

Anyone who has watched a child's eyes wander into sleep knows what posterity is. Posterity is the world to come. The world for whom we hold our ideals, from whom we have borrowed our planet and to whom we bear sacred responsibility.

President William E. Clinton, *Inagural Speech*, January 20, 1993

By the time children born today reach maturity, the destiny of much of Rhode Island's landscape will have been permanently ordained. The landscape-structuring decisions made during the coming thirty-odd years ahead will have great power over the lives of future generations. The landscape created will dictate the relationship of future Rhode Islanders to their environment and affect many characteristics of their everyday lives. The choices made, beginning today, will ordain how fully future citizens of Rhode Island will be able to enjoy the benefits of the state's bounty of natural resources. These decisions will foretell if the generations which follow us will live in a built environment that integrates and respects essential natural systems, or one that denigrates and neglects them. The investments we make, or fail to make, from this point forward, will ordain if our successors will live in cohesive communities which honor the cultural icons and historical artifacts connecting generations to each other across time, and to the common bond of the state's land and water; or if they will live in an incongruous landscape jumble, ignorant of history and traditions, and devoid of a land ethic.

Our "sacred responsibility" to posterity requires that we make our landscape-structuring choices with vision, with deference to the needs and possibilities of the future, and with the conviction that the beauty, diversity and wonder of Rhode Island's natural treasures, remain for discovery by our children and our children's children.

This part of the plan describes a recommended program for implementing the Greenspace and Greenways System. It outlines a series of broad initiatives and specific actions to be taken by governmental and private entities to advance the plan, estimates the potential costs of creating the System, and describes resources available to the task.

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8-1 Realizing the Vision: The Greenspace and Greenways Implementation Program

The vision advanced by this plan issues a challenge to a crucial generation. If Rhode Island vigorously embarks on a journey down *a greener path*, its future can be brightened by a 127,000 acre, 400 mile natural greenspace/greenway system safeguarding essential resources, and by an alternative transportation infrastructure of 200 miles of bikeways and 70 miles of trails spaning and linking the state. This part of the plan outlines the broad parameters of a generation-long (25 year) effort aimed at bringing the Greenspace and Greenway System into existence, and helping us reach that future.

8-1-1 Program Initiatives

The Greenspace and Greenways Implementation Program proposes activities under three major initiatives.

1. Green as We Grow: Greenspace Protection for a Sustainable Landscape

The primary thrust of the program would unite the State of Rhode Island, its communities, and public and private sector partners in a structured, 25-year land protection program to safeguard the resources of the state Greenspace and Greenway System. The sustainable landscape philosophy guiding this initiative would have the state and its communities maintain a rough proportionality between the rate at which we convert land for current needs, and the rate at which we protect it for the future.

Protection of system resources would be advanced on two parallel, interrelated tracks: (1) by standards requiring appropriate protection and public availability of greenspace as an integral design feature of every project that significantly structures the landscape; and (2) via a public investment program that recognizes the desirability of regularly-programmed investments in greenspace as a public good to achieve long-term goals.

The protection program would encompass the following features:

- **Regulatory vigilance**: Rigorous application of existing regulatory authority must be the front line of defense for the natural elements of the Greenspace and Greenway System. Regulation alone should be the principal avenue of protection for the 40 percent of the system subject to the state Freshwater Wetlands Act or the Coastal Resources Management Act. Regulatory schemes should give added priority to resource protection and restoration within the Greenspace and Greenway System and could enhance protection of key areas by directing mitigation/remediation investments (required in connection with permitted activities outside the Greenspace System) to benefit protection of the system.

- **Corridor planning:** *Greenway Corridor Conservation, Restoration and Management Plans* would be completed covering the 400 miles of major natural greenway corridors in the system. Modeled on the National Park Service's/National Association of Floodplain Managers' Multiple Objective River Corridor planning process, the resultant plans would provide detailed examination of the resource protection and management issues; identify threats and opportunities; and develop protection, restoration, and management strategies and priorities to guide investments. Plans would be developed with multi-community participation; and would be coordinated with the comprehensive planning process.

- **Focused acquisition:** Purchase of land (and interests in land) would be used to protect Greenspace and Greenway System areas that regulation alone could not adequately safeguard, to provide connectivy of the system and to accommodate public usage. The Greenspace acquisition program would focus Rhode Island's land protection programs upon the 28 percent (35,000 acres) of the 127,000 acre natural Greenspace System that is undeveloped, unprotected, and not subject to state regulation. Acreage goals of the Greenspace/Greenways Protection Program are as follows:

Table 155-8(1)(a)
Targets for Greenspace and Greenways System Protection by Technique

	Acres	% of Total Program
♦ Regulation	50,000	59
♦ Acquisition	35,000	41
PROGRAM TOTALS :	**85,000**	**100**

Table 155-8(1)(b)
Targets for Greenspace and Greenways System Acquisition by Acquiring Entity

	Acres	% of Acq.Program
ACQUISITION (all forms)	35,000	100
♦ Direct federal acquisition	1,400	4
♦ Direct state acquisition	17,850	51
♦ Direct local government acquisition	8,750	25
♦ Direct private conservation acquisition	1,750	5
♦ Donations via creative development	3,500	10
♦ Conservation donations/transfers	1,750	5
PROGRAM TOTALS :	**35,000**	**100**

- **Protection partnerships:** The protection program should utilize the capabilities of existing land protection programs and resources and should include participation by all partners traditionally allied with state land protection efforts (e.g., federal and local governments, and private conservation organizations). Partnership acquisition projects should be cost-shared at a 50 percent state/ 50 percent non-state ratio.

- **Creative development contributions:** The Program would develop a *green as we grow theme* by including a goal of protecting at least 10 percent of vulnerable Greenspace System acres via creative development techniques without significant public outlays. To achieve this, state contributions to local acquisition programs would encourage adoption and enforcement of local development regulations and requirements designed to protect Greenspace/Greenway System areas and stimulate creative private sector initiatives for preserving system land as a normal part of the (land) development process. While all localities would remain eligible for state funding, local partners exceeding a 10 percent private protection goal on an annual basis could be rewarded either with increased priority for

selection of their projects or by counting the value of the extra donations as local matching funds in the succeeding year's competition.

The efficacy of the protection program should be monitored using tracking indicators. Every five years, program assumptions and progress should be reassessed, and adjustments made where needed. For instance, if tracking indicators reveal that the program's reliance upon regulatory measures is providing inadequate protection for system resources, expansion of the acquisition element will be necessary, adding to overall program cost. Similarly, adjustments to the acquisition program may be necessary if program targets are not being met, or if costs exceed estimates.

2. Reweaving the Natural Web: Greenspace Reclamation

Restoring the values of degraded greenspace, where opportunities allow, is the second step Rhode Island must take along the greener path. This initiative seeks to apply remedial measures to restore damaged or broken links in the greenspace chain. Steps would be taken to re-introduce greenspace where it is in desperately diminished supply--our urban areas. Other actions would be aimed at controlling or minimizing the detrimental impacts of developed land uses where they imperil crucial system resources.

Greenspace reclamation programs would include:

- **Re-green the city:** The restoration of greenspace in cities and the creation of urban greenways must be a particular focus of greenspace reclamation efforts. Because they were largely developed prior to the modern era, Rhode Island's urban core cities are significantly deficient in public greenspace compared to contemporary national standards. Success in expanding public greenspace in urban environments is critical to achieving a more equitable distribution of public greenspace and expanding access to greenspace for tens of thousands of low income Rhode Islanders concentrated within our cities--for whom close-to-home recreation may be the only recreation. For these reasons, it is crucial that the greenspace and greenway network extend into and through our cities.

  - *Water's Edge--restoring waterways for people*: Massive public investments in wastewater treatment facilities and combined sewer overflow abatement authorized by Rhode Islanders in recent years will dramatically improve water quality of the rivers and tidal waters of the state's metropolitan core by early in the coming century. Public policy and investments in greenspace must insure that the renaissance of land use fronting urban waterways, cleaned up at public expense, benefits the public by way of opportunities for access and enjoyment of the waters and the water's edge. Providence's Waterplace provides the ultimate model, demonstrating the great promise that greenways along neglected rivers and shorefronts offer for restoring the urban public's access and enjoyment of water resources from which it has long been alienated. Recent studies have pointed to a potential for similar urban greenways along reaches of the Woonasquatucket, Moshassuck, West, and Pawtuxet rivers; and these possibilities should be pursued.

- *Nurturing Neighborhood Greenspace:* Successful ventures in several of the state's cities have demonstrated the positive contributions made by provision or improvement of small-scale greenspaces in neighborhoods. Creation of community gardens, institution of street tree planting programs, volunteer clean-ups of vacant lots and drainage ways, and the adoption and beautification of neglected common spaces (traffic islands, small parks, historic cemeteries) are simple and relatively inexpensive measures that have been successfully employed at the grassroots level in various urban communities. Other non-traditional solutions that could add to the supply of neighborhood greenery, include management of utility corridors for multiple purposes, and reclaiming unused or underused urban land (both unused/derelict and underutilized developed areas such as "excess" parking/paved areas) in strategic locations within greenway corridors.

  This strategy would seek to replicate successful models in urban environs throughout the State by promotion, providing information exchange, and demonstration and start-up grants to community groups. Standards requiring incorporation of sufficient usable greenspace in all new/revitalized neighborhood facilities should also play a role in expanding the quantity of greenspace in our cities, and restoring urban residents' connections to a more natural landscape.

- *Community involvement:* Especially in economically disadvantaged neighborhoods, the very process of building the Greenspace System should be instrumental to a larger goal of restoring hope and pride. Programs should encourage grassroots, bootstrap efforts to reclaim community greenspace. A recognition that neglected natural resources can be rejuvenated through community action can be a source of empowerment and inspiration for downtrodden communities, laying the groundwork for other creative, cooperative efforts. Giving neighborhoods a stake in creating their parks or community spaces also provides a powerful deterrent to misuse and vandalism.

- *Loss avoidance*: A first priority in greenspace-deficient urban areas is to avoid the unnecessary loss of existing and potential public open space. Abandonment of public park land, even if budget restrictions limit its regular maintenance, should not be a serious option given the shortage of open space in most urban communities. Even small irregular parcels along highway corridors, residuals from large tracts condemned to create the roadway and seemingly without public value, provide critically scarce open space and should not be sold off just to provide cash flow. To safeguard the present supply of public greenspace, the program would condition state funding for future local greenspace acquisitions on certification that all public open space presently owned by the jurisdiction would be retained, and execution of a public interest review prior to the surplusing of public land.

Over time, our efforts in urban areas should seek to re-stitch the natural fabric of greenspace, repairing, when opportunities avail, the rips and tatters we have made through the decades.

- **Wetland Restoration:** In our past dealings with greenspace, water resources often suffered particular neglect. It was expedient to fill wetlands and wall off the public from our urban

rivers, even to the point of interring some lengthy portions of our watercourses in subterranean conduits when they "got in the way." It is possible, with today's technology, to use created wetlands as wastewater treatment facilities, or for runoff and flood water storage. As future opportunities arise, we should stand ready to rescue our entombed rivers and streams, restore damaged wetlands and advantageously re-employ their natural functions. To encourage this, the Program includes a goal of restoring at least 100 acres of damaged wetlands and associated riparian land per year.

- **Arresting Degradation Threats**: In certain instances it will not be feasible to repair the fabric and restore the values of greenspace without intervention to stem pollution sources from adjoining developed land. In most instances, this effort would entail removing part of a paved parking lot that slopes into a river, and replacing it with a vegetative buffer strip or sedimentation basin. In other, likely limited, cases, it might necessitate purchase and removal of a land use that poses an unacceptable threat to a critical greenspace value--an auto graveyard adjoining a tributary feeding a drinking water supply, for instance.

3. Pedaling Mobility: Greening the Path from Here to There

The third major focus of the Greenspace and Greenways Implementation Program is transportation. For decades, our mobility needs have often been met at the expense of greenspace. The Greenspace program seeks to promote initiatives that will expand mobility options for people in an environmentally sound and health-promoting manner, and that promise to reduce auto congestion and pollution in the process.

Development of the statewide bikeway and trail greenway network as an alternative transportation infrastructure is the main impetus.

- **Accelerated Bikeway and Trail System Construction:** The accelerated development of a statewide system of independent bikeways would be accomplished under this initiative. The Program goal would be construction of an average of over seven miles of new independent bikeway per year, completing a 200-mile system by 2020. Interim goals of completing the North-South Trail by 2000 and Rhode Island's segments of the East Coast Greenway/bikeway by 2005 would make the state a leader in the *greening* of transportation networks.

- **Greenspace Enhancements:** Beyond an accelerated push to develop a statewide bikeway and trail network, Rhode Island should undertake a greenspace enhancement program as a regular part of its transportation programming. This program would include greenspace protection and mitigation measures associated with all new major transportation projects, as well as projects aimed at remediation for past impacts of transportation infrastructure upon the environment. Possible initiatives include:

    - *Main Street Survival/Revival:* Combining multi-modal transportation/infrastructure upgrading with integration of greenspace and

aesthetic/beautification features and pedestrian facilities, these enhancement projects would examine mobility needs of the state's traditional "main streets" within the context of supporting or re-asserting the area as a vital center of the community's social and economic life.

- *Urban Boulevards and Scenic Byways*: By linking transportation improvements with greenspace preservation and land use controls this program would seek to enhance the value of travel corridors to the communities they serve, produce streetscapes more conducive to pedestrian and bicycle travel, and safeguard (or restore) the pleasurable visual experience of driving.

  In urbanized areas, greenspace-themed restoration of major arteries, boulevards, and parkways, would seek to enhance their aesthetics, urbanity, and desirability for pedestrians and bicyclists. Traffic improvements (re-signalization, channelization and pavement marking, traffic calming devices, parking restrictions) can be skillfully combined with reintroduced greenery (street trees, flowerbeds, landscaped medians and shoulders, etc.), streetscape amenities (brick or cobble pavers, historically appropriate lighting, signage) and pedestrian and bicycle enhancements (improved/widened sidewalks, benches, trash receptacles, drinking water fountains, bicycle racks and lockers) Urban corridor revitalization would also include options for transit improvements such as priority bus lanes, turnouts and turnarounds with improved bus stops (information kiosks, consistent route signage programs, shelters, etc.) or creation of Class II or III (shared-roadway) bicycle routes, whenever appropriate.

  Scenic parkway and byway programs would apply similar comprehensive treatment (landscaping, distinctive designs for roadway appurtenances, purchase of visual easements, local land use and advertising controls) to suburban or rural roads designated as visually or culturally noteworthy.

  Enhancement projects have not and should not be undertaken solely as state transportation system initiatives. Their true potential lies in sparking a revitalization of neighborhoods and business districts. To achieve that promise, they must be the product of concerted state, local, business and community commitments to focus available resources on activities contributing not only to a comprehensive upgrading of the transportation infrastructure, but also to stabilizing and improving surrounding land uses and community facilities.

  Accordingly, priorities for projects should be based upon the willingness of the sponsoring local government and affected property owners to commit to changes in land use controls (enactment of new local land management controls (zoning, design review, signage) and other policies (such as enforceable maintenance agreements) necessary to insure that the publicly-financed improvements endure. Local partners should also be expected to bring resources (funds, volunteer labor, donation of land

for proposed enhancements) to the project to supplement state and federal transportation investments in achieving a comprehensive revitalization effort.

8-1-2 Action Recommendations

This section presents a series of more detailed recommendations for actions supporting the major initiatives of the Greenspace and Greenways Implementation Program. Actions are organized under seven general categorical headings, and are numbered soley for ease of reference. The recommendations, in most instances, do not specify which agency(ies), organization(s), or entity(ies) should assume responsibility for implementation. In most cases, achievement of the action will require concerted efforts of a number of greenspace partners.

[Leadership and Coordination

1. Establish a state Greenspace & Greenways Council to lead and coordinate public and private efforts in creating the Greenspace and Greenways System. The Council should be multi-disciplinary, comprised of federal, state, local, and private entities with interests in resource protection and development of the System.

2. Work closely with private non-profit organizations and grassroots citizens' groups advocating greenways at the community level. Insure that these groups are aware of the state Greenspace and Greenways Plan, and encourage efforts that relate to its implementation.

3. Build partnerships between Rhode Island's land preservation interests and the economic development community (e.g., Chambers of Commerce, builders, realtors, and designers groups) grounded on the common interest implicit in the System.

t Funding

4. Develop a Greenspace Investment Program providing dependable funding sources capable of implementing the greenspace program. This will include insuring that existing revenue sources are used to full advantage, and instituting new sources of revenue. A combination of existing and new sources in a dedicated Greenspace Trust Fund should also be explored.

5. Encourage the federal government to become a full partner with the states in preserving greenspace and building greenway systems for 21st century America. Congress should consider consolidating the numerous (under-funded) land resource protection programs under a (more fully-funded) umbrella program, which would allow states flexibility in administration and direction of funds to priority areas and would offer funding incentives to states that have adopted integrated, multiple-objective greenways plans. In the meantime, seek increased funding for the Land and Water Conservation Fund, Forest Legacy Program, Intermodal Surface Transportation Efficiency Act, and similar categorical protection /system development programs.

6. Direct available land acquisition/protection resources to projects supporting protection and sound management of vulnerable portions of the Greenspace and Greenway System. Where needed, modify program guidelines and criteria to give priority to projects in the System. Encourage private land protection partners to give similar emphasis to the system in projects they fund.

7. Provide sustainable funding and continuity in state land protection grant and loan programs to encourage and maintain participation by local government and private non-profit conservation groups in projects which support the Greenspace System.

h Landowner Incentives

8. Develop a Greenspace Stewardship program giving recognition and incentives to cooperating private owners of undeveloped land with Greenspace value. Owners who entered the program and agreed to preserve their land for an extended period would be rewarded with a comprehensive package of services and incentives (might include: public recognition; resource management/reclamation technical assistance; estate planning, automatic qualification for Farm, Forest, Open Space tax assessments; priority for future acquisition, state-guaranteed loans for development of *green*, (resource protection-oriented) economic development ventures, etc.).

9. Study changes to the Farm, Forest and Open Space Act that would give greater impetus to private conservation of the Greenspace System. These could include requiring automatic certification of privately-owned unimproved land within the System as farm, forest or open space (as appropriate) for tax purposes; establishing uniform statewide

valuations for farm, forest, and open space categories; linking the program to the phased purchase of key parcels (or of development rights) over time, and stiffening penalties for early withdrawal from the program.

10. Work to provide estate planning assistance for large-tract private landowners (especially in the Greenspace System), to ensure that landowners are aware of the possible financial benefits of conservation donations, and encourage land protection via donations.

T Planning & Technical Assistance

11. Provide greenway planning, land protection, and design advice to local governments and greenway groups.

12. Develop detailed plans for implementing Greenspace Program initiatives. Greenway Corridor Conservation, Restoration, and Management Plans would be produced in a partnership program between the Greenways Council and consortiums of local and private partners (cities and towns, watershed organizations, land trusts, etc.). Plans would examine, using a multiple-objective methodology and RIGIS data, resource management and reclamation needs; implementation possibilities for trails, bikeways, and transportation enhancements; and threats to greenspace resources. Protection priorities, resource management recommendations, and facility development schedules unique to each corridor would be produced.

13. Revise and update the *State Land Use Plan* (map) using current geographic data and analysis tools available via the RIGIS. This update should incorporate the results of the Greenspace and Greenways Plan and should designate areas for preservation or development based upon a land capability and infrastructure analysis utilizing the most recent natural resource, cultural resource, and public services and facilities datasets and information from local comprehensive plans.

14. Revise the guidance documents provided to local governments concerning the comprehensive planning process and local recreation planning to include information on the Greenspace and Greenways Plan, encourage local planning that reflects state greenspace goals, and encourage local projects and activities that support creation of the system.

15. Review local comprehensive plans to insure recognition of, and support for, the Greenspace Plan's goal, policies, and recommendations.

16. Develop a *State of the State's Land* report to accompany the annual *State of the State's Waters,* presenting a statistical portrait of the status of key greenspace resources and tracking implementation of the Greenspace Program. Develop new environmental indicators, such as forestland cleared, wetlands modified, land covered by impervious surfaces, acreage preserved, etc. Investigate the use of data sources such as development permit records and satellite imagery to provide better real-time tracking of key indicators.

17. Assess vacant land in urban areas for relationship to the greenspace system or as neighborhood greenspace. Identify high priority sites for acquisition as public greenspace.

18. Work with local governments and greenway groups to identify priority sites for greenspace reclamation efforts, including wetland restoration, reforestation, runoff and erosion control, flood storage/conveyance restoration, and containment or removal of degrading land uses.

Fostering Creative Development

19. Investigate the integration of mitigation transfer and banking techniques within state regulatory programs. Under mitigation banking, state wetlands and coastal management (and possibly other) regulatory programs could allow more flexibility for creative development in non-critical areas (generally more suitable for development), while directing protection and reclamation efforts towards critical Greenspace System areas.

20. Provide technical assistance and professional education in creative development techniques. Develop a handbook providing guidelines, criteria, and models for employing creative development as a way to preserve greenspace and assemble greenways, while producing landscape-compatible, community-supportable development.

21. Investigate creation of a Community Landbanking Program to encourage creative development. Under such a program, local governments could enter the land market to shape future development of critical lands. Parcels would be purchased by a town using a capital source (perhaps revenue bonds), and conditions attached requiring reliance upon creative development techniques to safeguard sensitive portions of the site. The land would then be sold for private development, presumably at a profit if it had been "banked" for some time, or if infrastructure had been upgraded in the interim. Proceeds (after debt service) would be available to continue and expand the program.

22. Encourage communities to employ mandatory cluster/planned development, transfer of development rights, site plan review, buffer and landscaping requirements, and other inducements to creative development in their land management ordinances.

23. Study the establishment of regulatory criteria allowing carefully-controlled use of innovative community or district-operated, small-scale (package) wastewater treatment and disposal systems in order to encourage creative development in appropriate areas. At minimum, criteria should require designation of service districts and greenspace preservation areas (density receiving and sending zones) in local comprehensive plans and land management ordinances, approval by state as consistent with State Guide Plan,

and designation of a responsible municipal (or regional) entity to own, operate, manage and maintain the facilities. Explore having the R.I. Clean Water Finance Agency and the Narragansett Bay Commission collaborate in creating a village-service district program that would assist localities in establishing, funding, and operating package plant services that could gain regulatory approval.

24. Require redevelopment projects in urban greenspace areas to assess reclamation opportunities (removal of excess paving, landscaping enhancements, runoff control, wetlands restoration, etc.) and include prudent measures where feasible.

25. Encourage localities to require the identification of existing trails as part of the development review process, and to insure their protection, especially where they relate to a community or state trail proposal.

26. Encourage land development standards that promote bicycle and pedestrian mobility via inclusion of appropriate on-site facilities and amenities (storage and locking, signage, sidewalks, benches, etc.). Consider allowing reductions in parking requirements in exchange for provision of bicycle and pedestrian facilities. Insure coordination of new developments to facilitate connection of off-road bikeways and trails at property lines.

" Community Involvement

27. Involve conservation commissions with developing and implementing local greenspace/greenway systems. Charge commissions with coordinating implementation efforts of local agencies and private land protection partners, and with monitoring the status of greenspace in their jurisdictions. Encourage commissions to review proposed new development and provide recommendations to the local Planning Board on the effects on greenspace resources and development techniques that could lessen impacts.

28. Develop bikeway and trail construction standards that allow use of low-cost techniques, volunteer labor, and local government resources (public works equipment and labor, etc.) where feasible, to minimize costs, accelerate completion, and maximize community participation in local independent projects.

29. Develop a community farming/gardening initiative to provide technical assistance (via URI Cooperative Extension, or similar program) and small "seed" grants to community action programs, neighborhood groups, land trusts, food banks, and similar non-profit organizations for establishment of community gardening programs. Assess unused public land (excess highway right-of-way, under-used portions of parks, etc.) for potentially suitable garden plots.

30. Utilize the National Community Service Corporation's volunteer jobs program to help create the Greenspace System, while providing a learning experience. Coordinate with the Rhode Island Commission on National and Community Service to create a RI

GreenCorps volunteer program involving trail construction, greenspace reclamation, and public greenspace maintenance endeavors.

31. Investigate developing a structured "Boot Camp" program for non-violent juvenile offenders involving work on greenspace reclamation or facility construction/maintenance, and offering natural resource/environmental career training.

D Asset Management

32. Avoid the unnecessary loss of greenspace currently within the public domain. Ensure that State surplus property disposal include an assessment of the greenspace value and relationship to the Greenspace/greenways system of all properties proposed for disposal as surplus. Such review should require *agencies proposing* surplusing land to detail the public greenspace values, if any, that the land provides; to assess the need for public greenspace within the vicinity of the parcel; and to describe its potential for reclamation as beneficial greenspace and/or utility to creation of the greenway network. The assessment would also include recommendations for management and protection criteria required as restrictions upon the parcel, if disposal were approved.

33. All state and quasi-state agencies should review land that they manage for its relationship to the System and should identify conservation, restoration and management measures that advance protection and/or reclamation of parcels having high greenspace value. They should allow maximum public realization of greenspace values consistent with agency operations and missions. The review should also assess candidate areas for enrollment in the Natural Heritage Reserves Program. Public agencies managing land designated as public open space should also review their holdings to assess opportunities for sale, exchange, or jurisdictional transfer of unencumbered land having no greenspace value and no relationship to the proposed system.

34. Encourage public utilities to manage right-of-way corridors as greenways, including public trails and bikeways, where practical.

8-2 Estimated Costs of the Greenspace and Greenways Program

Creation of a statewide system of greenspace and greenways envisioned by this plan will require sizable investments of public and private funds over a considerable time period. Estimation of costs for time periods extending well beyond the 3-5 year timeframes of conventional economic models is more art than science; and can be subject to wide variances depending upon the underlying assumptions used to produce the estimate. Given the utter impossibility of seeing 25 to 35 years "down the road" with any clarity, perhaps the most that can be presently proffered is an explicit statement of assumptions, so that their reasonableness can be ajudged.

Implementation of the Greenspace and Greenways Program will incur both capital and operational costs. Significant investments of capital will be required for land acquisition under the Greenspace Protection initiative and for bikeway and trail development under the Pedaling Mobility initiative. Forecasting the cost for these program investments is relatively straightforward, given that the desired program outcomes (e.g., acres to be acquired, miles of bikeway and trail to be constructed) have been well quantified, and that considerable experience is available on which to base present costs for these activities. Although Greenspace Reclamation efforts will also require capital investments, the cost dimensions of this initiative are difficult to estimate at present. Operational costs will also be incurred during implementation of each of the three program elements.

8-2-1 Land Acquisition Costs

The Greenspace Acquisition Program represents the largest potential capital requirement for implementing the Greenspace and Greenways System. To estimate the magnitude of costs for the acquisition element of the program, a model was developed which distributes total targeted land purchases (35,000 acres) into even annual increments over two program option periods: 25 and 35 years.

High, medium, and low estimates for both program length options were developed using three assumed values (4%, 6%, and 8%) for the average annual *land cost inflation rate,* or year-to-year average increase in the price of undeveloped land. These inflation factors were applied to the base year per acre acquisition cost figure ($5,000), derived by averaging state (DEM) fee simple open space acquisitions completed since 1980.

The model assumes that distribution of responsibilities and reliance upon various acquisition tools in future land protection endeavors will resemble past patterns in many respects, but should also differ in key ways. Jurisdictional and technique allocations in the model are made to the following seven land protection techniques and jurisdictions: (1) federal acquisition, (2) state fee simple acquisition, (3) state acquisition of less-than-fee-simple interest, (4) local fee simple acquisition, (5) local less-than-fee-simple acquisition, (6) private conservation organization acquisition, and (7) protection via private creative development (protecting valuable portions of parcels as they are developed, using techniques as clustering, transfer of development rights, dedication to open space, and donations).

The model's protection *mix target* factor, representing a goal for the proportion of total program acreage to be protected by the jurisdiction/technique, assumed that future protection efforts would be based closely upon the proportional jurisdictional representation of past protection efforts (as evidenced by current patterns of ownership/management of protected open space) but should also reflecte expectations relative to future increases or decreases in jurisdictional participation in land protection efforts. For example, compared to past efforts, the model's protection mix assumptions predict that: federal acquisition will increase (via the Forest Legacy Program), but remain a small part of the total mix (4%); state and local governmental efforts will continue to constitute the bulk (about 75% combined) of acquisition efforts; and private

conservation efforts, including land protection through creative development, will grow substantially (from 8% to 20%).

The assumptions of proportional jurisdictional and technique mix were used to distribute estimated costs among participating entities in the protection program. State cost-sharing of one-half of acquisition costs with local and private non-profit conservation partners is assumed in the model, based upon past practice, and as an impetus to stimulating participation.

Table 155-8(2)(a) presents high, medium and low estimates of total program cost, in aggregate and distributed by jurisdiction/technique, for the 25 and 35 year program options. Estimates of costs for the first ten years of each program option are provided in Table 155-(8)(2)(b). The figures output by the model represent one-time capital costs, and do not include potential debt service costs, administrative and carrying charges, and land management/operations costs.

Table 155-8(2)(a)
Range of Estimated Total Costs for Greenspace Acquisition Program

PROGRAM LENGTH (YRS):		25			35		
LAND INFLATION RATE:		4%	6%	8%	4%	6%	8%
Figures in millions							
TOTAL PROGRAM COST :		**$259.1**	**$341.4**	**$455.0**	**$327.4**	**$495.3**	**$765.9**
COST BY JURISDICTION:							
	FEDERAL	11.6	15.4	20.5	14.7	22.3	34.5
	STATE	186.3	245.4	327.0	235.3	356.0	550.6
	LOCAL	34.3	45.1	60.1	43.3	65.5	101.2
	PRIVATE	27.0	35.5	47.4	34.1	51.5	79.7

Table 155-8(2)(b)
Greenspace Acquisition Program Estimated Cost: First 10 Years

PROGRAM LENGTH (YRS):	25			35		
LAND INFLATION RATE:	4%	6%	8%	4%	6%	8%
Figures in millions						
YEARS 1-10 COST :	**$ 74.7**	**$ 82.0**	**$90.1**	**$53.4**	**$58.6**	**$64.4**
COST BY JURISDICTION:						
FEDERAL	3.4	3.7	4.1	2.4	2.6	2.9
STATE	53.7	59.0	64.8	38.4	42.1	46.3
LOCAL	9.9	10.8	11.9	7.1	7.7	8.5
PRIVATE	7.8	8.5	9.4	5.5	6.1	6.7

The 35 year program offers lower initial costs, but dramatically higher total program costs than the 25 year program option, particularly for the high inflation rate scenario. In terms of costs to state government, the 25 year program's starting cost of $4.5 million, is comparable to current (1993) state investments in open space purchases, which totaled $4.6 million. Under the medium inflation scenario, the investment of state funds required during the 25 year program approximates $10 per Rhode Islander per year.

8-2-2 Bikeway System Development Costs

Completion of an (approximately) 200 mile independent bikeway system constitutes the second major "new" capital cost of the Greenspace and Greenways Implementation Program. To estimate the potential cost of this initiative, a cost projection similar to that performed for the land acquisition program was developed. This model distributed total new independent bikeway construction miles (180) into a 25 year level program calling for completion of 7.2 miles annually. A year one starting cost per mile of bikeway was estimated at $500,000, based upon Rhode Island's experience in construction of the East Bay Bikeway (built during the late1980s) and upon preliminary estimates of the average per mile construction cost of the Blackstone River Bikeway project (now in preliminary design). Construction cost estimates include planning, design and construction, but exclude right-of-way acquisition. Future construction was costed for both low (2%) and moderate (4%) average annual inflation conditions. Distribution of costs to participants assumed that construction of the independent system would continued be funded at 80% federal, 20% state, as currently provided for under the Intermodal Surface Transportation Efficiency Act.

Projected costs, by participant for the bikeway construction program are presented in Table 155-8(3)(a) for a 25 year program period, and for the first ten years of the program in Table 155-8(3)(b).

Table 155-8(3)(a)
Estimated Cost for Bikeway Construction Program

PROGRAM LENGTH (YRS):	25	25
AVG. INFLATION RATE:	2%	4%
Figures in millions		
TOTAL PROGRAM COST :	**$ 115.3**	**$149.9**
COST BY JURISDICTION:		
FEDERAL	92.2	119.9
STATE	23.1	30.0

Table 155-8(3)(b)
Bikeway Construction Program Estimated Cost: First 10 Program Years

PROGRAM LENGTH (YRS):	25	25
AVG. INFLATION RATE:	2%	4%
Figures in millions		
YEARS 1-10 COST :	**$ 39.4**	**$43.2**
COST BY JURISDICTION:		
FEDERAL	31.5	34.6
STATE	7.9	8.6

8-2-3 Reclamation Costs

Estimating the cost of reclaiming damaged or degraded greenspace is complicated by uncertainty concerning the nature and extent of restoration efforts needed, and a relative lack of experience in natural resource reclamation. Moreover, reclamation costs will likely be highly project- and site-specific, varying considerably depending on the current and historic uses of the land to be restored and the restoration goal(s) for the site. Replacing pavement in a river-fronting parking lot with grass and trees to create a greenway buffer would presumably cost much less than reclaiming a similar riverine greenway parcel on which hazardous-waste had been disposed. Another consideration is the probability that most greenspace reclamation will likely occur on an incremental basis in connection with projects having other principal purposes.

One area of reclamation for which a body of experience *has* been amassed over the last decade is the restoration of wetlands. A recent survey research study that examined approximately 1,000 wetland restoration projects of varying sizes, scopes, and complexities throughout the nation found the *average* per acre cost for restoration to range from a low of $1,000 per acre for agricultural conversion projects, to over $75,000 per acre for forested freshwater wetland projects[1]. Assuming a $50,000 per acre cost estimate and a 100 acre/year restoration goal recommended in the Greenspace Reclamation Program yields an annual cost of $5.0 million in the

[1] King. D and Bohlen, C. *Estimating the Costs of Restoration* in **National Wetlands Newsletter** v.16. n.3 May/June 1994.

first year. Under a 4 percent annual inflation assumption, the cost of this program element would grow to $19.2 million in Program Year 25. The total cost for the 25 year wetlands restoration effort would be $268 million. Federal and private sector participation would be expected to defray a portion of these costs.

8-3 Marshaling Resources

Realization of the Greenspace and Greenway Program will require a marshaling of energy and resources, likely transcending those traditionally available for land protection. Beyond support from all levels of government, it must inspire private participation and contributions--from the smallest grassroots citizens' group up through national organizations. Successful implementation will also require achieving greenspace goals as ancillary benefits of programs having other principal purposes. Finally, and most critically, if the vision of a statewide Greenspace and Greenways system is to be realized, public and private funds--adequate in size and dependability--must be secured to support orderly, programmed execution of the plan.

This section catalogues existing and potential resources that may be deployed to support implementation of the recommended Greenspace and Greenways System. Resources are described in three general categories: *Tools and Techniques*, a compendium of the legal mechanisms available to protect greenspace resources; *Institutions and Programs*, a listing of agencies, organizations, and programs whose missions make them likely participants in implementing the Greenspace network; and *Funding Alternatives*, a description of existing and potential sources of fiancing.

8-3-1 Tools and Techniques: The Land Protection Toolbox

Table 155-8(4) (which follows page 8.21) lists the predominant measures utilized to protect land having natural or cultural resource value. The panoply of tools fall into two general headings: (1) *acquisition techniques* and (2) *regulatory techniques.* While specific techniques vary greatly, depending on the nature of the public value to be conserved and the degree of control required or desired to accomplish the protection objective, several generalities can be stated relative to the broad categories.

Acquisition techniques, in general, are more costly than regulatory approaches; but they provide greater guarantee of permanent protection and more flexibility in management. Acquisition, generally of full title, is often required (or preferred) for lands on which public usage is contemplated. Ordinarily the result of consensual agreement between government agency and private landowner, acquisition is also much less adversarial than regulation, which involves unilateral application of governmental power upon landowners.

Further distinguishing the two categories are differences in how the legal environment regards their utilization by governments in pursuit of land protection goals. In public acquisition programs, government becomes *just another buyer* in the private land market. (Although its

authority to invoke eminent domain condemnation distinguishes it from other buyers, in actuality, this coercive measure is relied upon relatively infrequently, generally only as a last resort.) As a participant in the land market, governmental acquisitions are governed by the ancient precepts of property law. Although specific techniques may have archaic requirements, requiring expertise and careful execution, the law of property acquisition can be navigated with relative ease by governments--as long as they have sufficient funds to participate in the market.

Properly run government acquisition programs operate on legal *terra-firma* compared to the uncertain terrain of regulation. In regulation, governments act on behalf of the public good in exercising the police power to enjoin landowners from making certain uses of their land. Regulation is restrained by the limits placed on governmental actions by the Constitution, most particularly the prohibition of the Fifth Amendment against the *taking of private property without compensation*. Regulations must also meet high legal standards relative to purpose, propriety, and equity.

While the legality of public regulation is well-settled in principle, in practice, governments must continually walk a tightrope in crafting rules that achieve the desired effect for the public welfare, without going too far in denying individual owners the enjoyment of their property. In recent decades, governments have responded to increased public demands for control of development impacts and for enhanced protection of resources by becoming more activist in their reliance upon regulatory techniques, and more exacting in their demands on private landowners. Recent Supreme Court decisions have narrowed the discretion of regulators, requiring that their rules demonstrate a connection, or *nexus*, between ends and means, and that there be a "rough proportionality" between impacts being regulated and the burdens placed upon landowners by the regulations[2].

Successful implementation of a greenspace system must utilize acquisition and regulatory techniques hand-in-hand, using each to optimum advantage in particular situations. A cost-effective strategy would employ (lower cost) regulatory measures in a broad-reaching defense of threatened resources categories (wetlands, watersheds, agricultural land), allied with a public acquisition program focusing on the most critical system components, areas where public access and usage is desired, and parcels where regulation alone either would be insufficient to protect the vital public interest or would necessitate imposition of Constitutionally-suspect conditions upon private owners. In practice, this boils down to maintaining as vigorous a regulatory defense of greenspace resources as possible, while simultaneously maintaining as vigorous a public acquisition program as resources allow.

2 See *Nollan v. California Coastal Commission* (U.S. SupCt. 1988) and *Dolan v. City of Tigard* (U.S. SupCt. 1994).

8-3-2 Getting *Greenbacks* for Greenways: Sources of Funding to Invest in Greenspace and Greenways

The costs outlined in section 8-2 for the Greenspace and Greenways Program would be daunting in the best of times; they appear more so in the current times as the state pulls itself up from the economic distress of 1991-2. The costs, while challenging, are not insurmountable--particularly if they are seen as investments which will yield benefits not only for today, but for "all time to come". If Rhode Islanders are *determined* to save the essential features of their landscape and create new avenues for enjoying the outdoors, they *will* find the necessary wherewithal to invest in greenspace and greenways.

The Courage to Ask: Finding Funds for ... "an enterprise which is for all time to come".

The Commission is most reluctant at this time to ask the State for further appropriation, for the recent financial depression has been felt by the General Treasury. Yet it can not forget that the condition of the public balance at any time has but small bearing upon an enterprise which is for all time to come, and which is to be paid for almost wholly by future generations; and which will cost these generations very much more money for very much less desirable results, if the work is not now provided for. The Commission feels pitifully helpless as it sees splendid opportunites about to escape unless aid is given now. [3]

Table 155-8(5), which follows Table 155-8(4), catalogues financial resources which could be considered as investment capital for greenspace and greenways and identifies a number of existing and potential sources of revenue which could, if the public wills, be directed to support the Greenspace and Greenways Program.

8-3-3 Institutions and Programs

From a narrow perspective, implementation of the statewide greenspace and greenway system could be defined as a series of specific tasks assigned to one or several existing agencies having land protection as their principle mission. But the network is based on the premise of cutting across many jurisdictions and narrowly-defined responsibilities. If the system is to provide as wide an umbrella of benefits as it is capable of--resource protection, alternative transportation, tourism and economic development, recreation, education, community revitalization--it must engage the participation of diverse agencies and entities, including many traditionally seen as distinct from, and sometimes even opposed to, land protection.

Table 155-8(6), which follows Table 155-8(5), lists and describes organizations that are logically instrumental to the task of building the statewide greenspace system. This identification begins the process of building a coalition of entities, public and private, that should play a role in threading the network of greenways through Rhode Island's future landscape.

[3] Metropolitan Park Commission of Providence Plantations. *Fifth Annual Report to the General Assembly.* 1909. p. 15.

The generational process of building a greenspace and greenway network may also cause us to re-think the validity of some of our present institutional arrangements. Maybe, it will turn out, people who live along the same riverway, but in different towns, have more common objectives to work towards than do people who live in the same town, but in different watersheds. Perhaps we will have our schools teach our children their ecological addresses, as well as their mailing addresses. Such realizations will dawn slowly; but as the greenspace and greenway system gradually becomes an organizing feature of the future landscape, it will come to shape our perceptions of time and distance, affect how we live our lives, and perhaps, ultimately influence our mental definitions of communities and identification with geopolitical constructs.

8-4 Conclusion.....Setting Foot Down the Greener Path

The vision offered by *A Greener Path* is of a different Rhode Island in the future. A statewide system of greenspace and greenways would constitute a totally new *infrastructure* for the state, the very creation of which would inspire sweeping changes in how Rhode Islanders relate to the land and how we get around the state.

Adoption of this plan by state government provides important standing and benefits to the statewide greenspace and greenway system vision. The plan confers official stature to the greenspace and greenway system, disseminates information about it, and broadens discussion of it. The state plan offers leadership, a goal, and policies to focus available resources for optimum impact.

But mere adoption of the plan will not insure realization of the vision it holds forth. What is truly required to effect such fundamental change is a movement. If Rhode Island's future is to be built around a system of greenspace and greenways, the vision must be embraced broadly by the citizens of Rhode Island. To the extent that it supports the efforts already underway by scores of citizen groups throughout the state to protect greenspace and create greenways, this plan can serve as an important coalescing point for the energy, commitment, and idealism being invested by hundreds of Rhode Islanders on behalf of a new, *greener* vision for their state's future.

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